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## In the Claims:

- 1. 10. (Cancelled)
- 11. (Original) A method of making a semiconductor capacitor comprising: forming a first electrode on a semiconductor substrate; and

forming a tantalum oxide layer on the first electrode by depositing at least one precursor and ozone gas, the at least one precursor represented by the formula:

$$H_3CH_2CO$$
 $H_3CH_2CO$ 
 $H_3CH_2CO$ 

wherein X is selected from the group consisting of nitrogen, sulfur, oxygen, and a carbonyl group; and  $R_1$  and  $R_2$  are independently alkyl; and

forming a second electrode on the tantalum oxide layer.

- 12. (Original) The method according to Claim 11, wherein said step of forming a tantalum oxide layer on the first electrode comprises injecting the at least one precursor, the ozone gas and a purge gas on the first electrode sequentially.
- 13. (Original) The method according to Claim 11, further comprising the step of forming a tantalum preprocessed layer on the surface of the first electrode by depositing at least one tantalum precursor including oxygen bond by chemical vapor deposition prior to said step of forming a tantalum oxide layer on the first electrode.
- 14. (Original) The method according to Claim 13, wherein the at least one tantalum precursor is selected from the group consisting of  $Ta(OC_2H_5)_5$  and  $Ta(OCH_3)_5$ .
- 15. (Original) The method according to Claim 11, wherein the first electrode comprises polysilicon, a noble metal, a metal nitride, and combinations thereof.

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- 16. (Original) The method according to Claim 11, wherein the purge gas is argon, nitrogen, or mixtures thereof.
- 17. (Original) The method according to Claim 11, wherein  $R_1$  and  $R_2$  are each methyl and X is nitrogen.
- 18. (Original) The method according to Claim 11, wherein  $R_1$  and  $R_2$  are independently  $C_1$  to  $C_4$  alkyl.
- 19. (Original) The method according to Claim 15, wherein the noble metal is selected from the group consisting of Ru, Ir, Pt, and combinations thereof.
- 20. (Original) The method according to Claim 15, wherein the metal nitride is selected from the group consisting of TiN, TaN, WN, and combinations thereof.
- 21. (Original) The method according to Claim 11, wherein said step of depositing the at least one precursor on the first electrode occurs at a temperature ranging from about 100°C to about 600°C
- 22. (New) The method according to Claim 1, further comprising uniformly depositing the tatalum oxide layer.
  - 23. (New) A method of making a semiconductor capacitor comprising: forming a first electrode on a semiconductor substrate;

uniformly forming a tantalum oxide layer on the first electrode by depositing at least one precursor and ozone gas, the at least one precursor represented by the formula:

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$$H_3CH_2CO$$
 $H_3CH_2CO$ 
 $H_3CH_2CO$ 

wherein X is selected from the group consisting of nitrogen, sulfur, oxygen, and a carbonyl group; and  $R_1$  and  $R_2$  are independently alkyl; and

forming a second electrode on the uniform tantalum oxide layer.

- 24. (New) The method according to Claim 23, wherein said step of forming a tantalum oxide layer on the first electrode comprises injecting the at least one precursor, the ozone gas and a purge gas on the first electrode sequentially.
- 25. (New) The method according to Claim 23, further comprising the step of forming a tantalum preprocessed layer on the surface of the first electrode by depositing at least one tantalum precursor including oxygen bond by chemical vapor deposition prior to said step of forming a tantalum oxide layer on the first electrode.
- 26. (New) The method according to Claim 25, wherein the at least one tantalum precursor is selected from the group consisting of Ta(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub> and Ta(OCH<sub>3</sub>)<sub>5</sub>.
- 27. (New) The method according to Claim 23, wherein the first electrode comprises polysilicon, a noble metal, a metal nitride, and combinations thereof.
- 28. (New) The method according to Claim 23, wherein the purge gas is argon, nitrogen, or mixtures thereof.
- 29. (New) The method according to Claim 23, wherein  $R_1$  and  $R_2$  are each methyl and X is nitrogen.

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- 30. (New) The method according to Claim 23, wherein  $R_1$  and  $R_2$  are independently  $C_1$  to  $C_4$  alkyl.
- 31. (New) The method according to Claim 27, wherein the noble metal is selected from the group consisting of Ru, Ir, Pt, and combinations thereof.
- 32. (New) The method according to Claim 27, wherein the metal nitride is selected from the group consisting of TiN, TaN, WN, and combinations thereof.
- 33. (New) The method according to Claim 23, wherein said step of depositing the at least one precursor on the first electrode occurs at a temperature ranging from about 100°C to about 600°C